



PAINT AND OIL LOCKER (POL) FACILITY FACT SHEET

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
KENNEDY SPACE CENTER
BREVARD COUNTY, FLORIDA**

Location

The Paint and Oil Locker Facility (POL) is located within KSC's industrial area. The site is bounded by 4th Street to the north, by the Sewage Treatment Plant No. 1 to the east and the sewage treatment plant polishing pond and spray field to the south.

History

The POL Facility is a NASA operated industrial site that was constructed between 1965 and 1972 to support space flight efforts at KSC. The facility includes the POL Building (M6-894) an acid storage facility, a gas cylinder storage structure, a covered storage structure and a transformer area that comprise an area of approximately 7 acres. Past and current operations at the POL Facility include storage of chemicals, such as solvents, adhesives, photographic and printing chemicals, detergents, insecticides, greases, oils, lubricants, and waxes.

In 1997 a Solid Waste Management Unit (SWMU) Assessment was conducted and determined that volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and metals were detected in sediment. VOCs, PAHs, and metals were found in soil and metals, greases, and oil were found in surface water. VOCs were detected in groundwater. A RCRA Facility Investigation indicated that a source zone consisting of high levels of chlorinated solvents, primarily trichloroethene (TCE), existed in the south portion of the POL Facility. An Interim Measure (IM) was performed between January and March 2002 to remove the TCE source zone. RFI results also indicated that groundwater had been impacted by chlorinated solvents, primarily TCE, cis-1,2-Dichloroethene (cDCE), vinyl chloride (VC), and aluminum which were detected above FDEP Groundwater Cleanup Target Levels (GCTLs). In

2003 a RCRA Corrective Measure Study (CMS) was conducted to identify and evaluate potential technologies to reduce contaminants present in groundwater to acceptable regulatory cleanup target levels.

Treatment

To remove VOCs, primarily TCE, cDCE, and VC, in groundwater in-situ chemical oxidation (ISCO) and enhanced bioremediation for the high concentration plume area and monitored natural attenuation for the low concentration plume area were selected as the final corrective measures for groundwater at the POL Facility.

ISCO and Enhanced Bioremediation

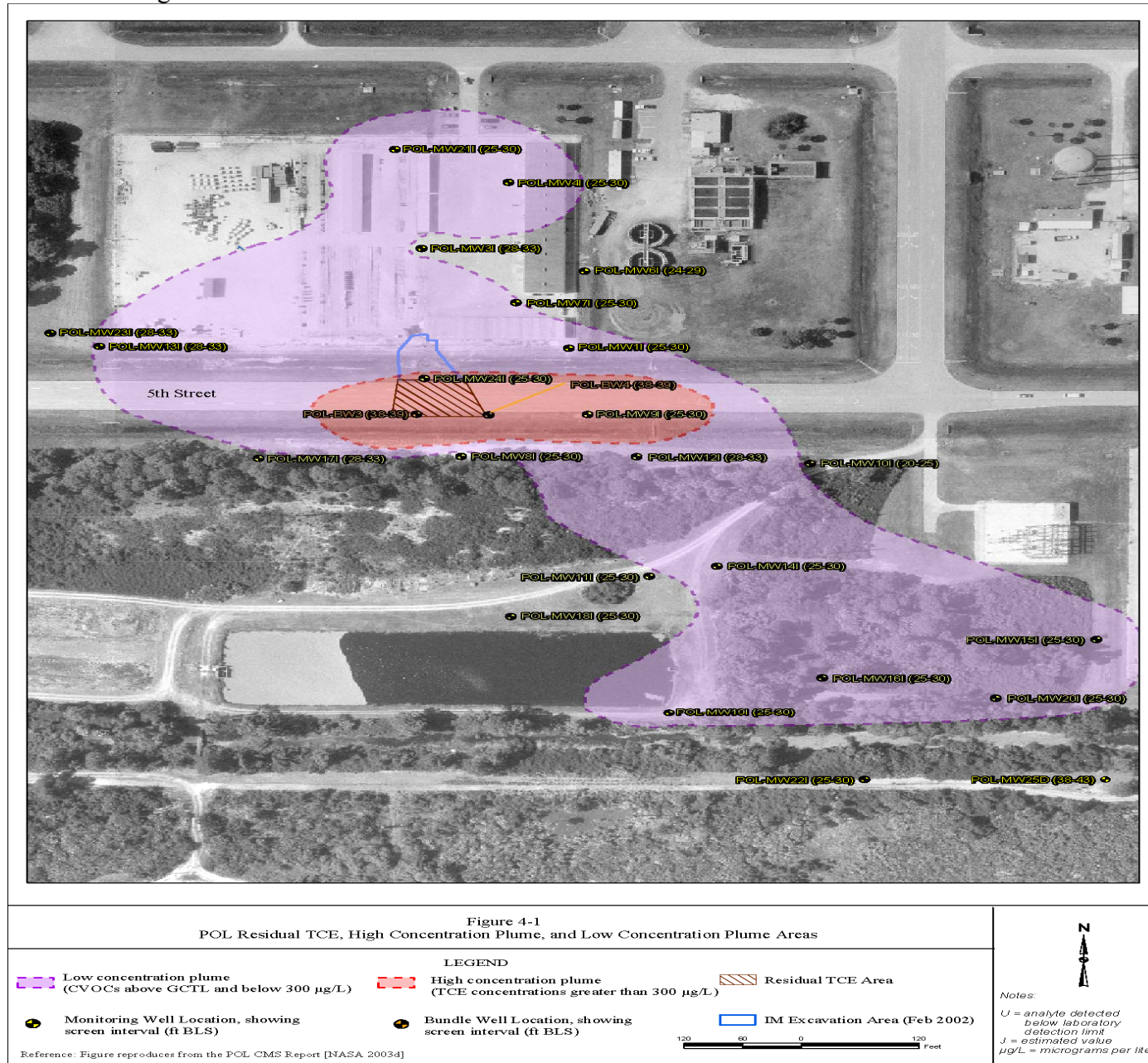
First, the ISCO will utilize permanganate for treatment of the approximately 7,000 ft² residual TCE area. This involves adding the chemical oxidant in liquid form to oxidize the chlorinated VOCs present to non-hazardous end products such as carbon dioxide and water. The ISCO technology will deliver the chemical oxidant to the high concentration footprint via an array of vertical injection wells and a network of horizontal injection wells installed beneath the roadway to distribute the oxidant, with the delivery provided by a pressurized pumping system. Secondly, the enhanced bioremediation will treat the high concentration VOC area of approximately 35,000 ft². The approach will involve aquifer buffering to promote the necessary pH range (6.0 to 8.5) and adding nutrients to the subsurface to promote an accelerated rate of VOC remediation by the naturally occurring microorganisms present in the subsurface. The enhanced bioremediation remedy will require a number of years to meet corrective measures objectives, since the reduction of COCs will be gradual as the elevated VOC concentrations degrade. In addition, monitored natural attenuation (MNA),

which involves natural processes, will be used to remediate the low concentration plume area reducing concentrations over time.

Conclusion

The combination of ISCO, enhanced bioremediation and monitoring of natural attenuation is believed to be

the best strategy to reduce VOC concentrations to GCTLs within a reasonable period of time with the high and low concentrations plume areas. To assure that the groundwater is not being used for drinking water an institutional control for this facility has been implemented.



This Fact Sheet was written and produced by the NASA/KSC Environmental Program Office. All comments or questions can be made by calling (321) 867-8402 or by writing to the following address:

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